Databases in the Management of Epidemiological Outbreaks Part of the National Critical Infrastructure: The Evolution during the Pandemic

Călin MUNTEAN[a,*], Călin CHEŢE[b], Alexandru BULLA[c], and Alexandru POPA[d]

[a] Discipline of Medical Informatics and Biostatistics, "Victor Babeş" University of Medicine and Pharmacy from Timişoara, Eftimie Murgu Str., No. 2, 300041, Timişoara, Timiş, Romania
[b] Timiş County Ambulance Service, IT Department, Romania
[c] Synopsis (Nokia), Database Warehouse Analyst / Software Developer, Global Service Delivery – Performance, Romania
[d] Timiş County Public Health Directorate Timiş, Romania
E-mail(*): cmuntean@umft.ro

* Author to whom correspondence should be addressed

Abstract

The evolution of the pandemic has led to a change in public health and data management in the infectious disease surveillance network monitored by the county public health directorates. At the beginning of the pandemic, the SARS-CoV 2 (COVID-19) cases were reported using Excel files sent by e-mail to the National Center for Communicable Disease Surveillance within the INSP. The need for centralization and data analysis forced the Ministry of Health to request the support of MI through the Special Telecommunications Service to develop a complex infrastructure that can meet the needs of reporting and switching critical data. During this period, there were 67 legislative changes in Romania aimed at reporting and collecting data that led to the remodeling of the information structure and then to the adaptation of computer systems to the requirements of the accident structure. The first progress in adaptation was the database for allocating the unique case code that evolved rapidly from a collaboration structure between DSP and SJAT to the inclusion of UPU services in county hospitals to the expansion of specialized clinical and outpatient departments of city hospitals, municipal, county. The need for evidence in testing and reporting positive cases developed a parallel database that evolved separately then became emerging and eventually unified. Epidemiological surveys have highlighted the need to record personal data from epidemiological surveys and follow-up contacts and then to issue quarantine or isolation decisions that have increased the difficulty in administering and transmitting data to the Ministry of Health, INSP, SAJT, Family Physicians, laboratories testing RT-PCR. This study presents the main moments of a historical and documentary nature to understand better the situations that the institutions involved in the management of the pandemic went through. In conclusion, the need to adapt information systems to the electronic environment is vital in a context of crisis and vital for support in the national critical infrastructure.

Appl Med Inform 43(Suppl. S1) September/2021

S31